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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/690,566

Applicant(s)

LILLY ET AL.

Examiner

JUSTIN M. PATS

Art Unit

3623

Period for Reply
-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 4-13, 15-19, 22-30 and 32-53 is/are pending in the application.
- 4a) Of the above claim(s) 52 and 53 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 34-39 is/are allowed.
- 6) ☒ Claim(s) 1 and 4-5, 7-13, 15-16, 19, 22-23, 25-30, 32-33, 40-43, 45-47, and 51 is/are rejected.
- 7) ☒ Claim(s) 6, 17, 18, 24, 44 and 48-50 is/are objected to.
- 8) ☒ Claim(s) 52 and 53 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Final Drawing (PTO-940)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Notice to Applicant

1. The following is a Final office action. In response to Examiner's communication of 12/10/07, Applicant, on 4/10/08, amended claims 1, 40, and 43. Applicant also added claims 48–53. Claims 1, 4–13, 15–19, 22–30 and 32–53 are pending in this application and have been rejected below. Newly added claims 52–53 have been withdrawn due to a restriction by original presentation as discussed below.

Election/Restrictions

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1, 4–13, 15–19, 22–30 and 32–51, drawn to a computer implemented method and system for determining customer service impact, classified in class 705, subclass 7.
 - II. Claims 52–53, drawn to a computer implemented method for optimizing scheduling operation based on customer service impact, classified in class 705, subclass 7.

The inventions are distinct, each from the other because of the following reasons:

3. Inventions I and II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, subcombination II has separate utility such as selection of at least two scheduling operations for comparison purposes to find the most efficient operation. See MPEP § 806.05(d).

The examiner has required restriction between subcombinations usable together. Where applicant elects a subcombination and claims thereto are subsequently found allowable, any claim(s) depending from or otherwise requiring all the limitations of the allowable subcombination will be examined for patentability in accordance with 37 CFR 1.104. See MPEP § 821.04(a). Applicant is advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the

present application, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application.

4. Restriction for examination purposes as indicated is proper because all these inventions listed in this action are independent or distinct for the reasons given above and there would be a serious search and examination burden if restriction were not required because one or more of the following reasons apply:

- (a) the inventions have acquired a separate status in the art in view of their different classification;
- (b) the inventions have acquired a separate status in the art due to their recognized divergent subject matter;
- (c) the inventions require a different field of search (for example, searching different classes/subclasses or electronic resources, or employing different search queries);
- (d) the prior art applicable to one invention would not likely be applicable to another invention;
- (e) the inventions are likely to raise different non-prior art issues under 35 U.S.C. 101 and/or 35 U.S.C. 112, first paragraph.

5. Because applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 52–53 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

6. Should applicant traverse on the ground that the inventions are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

7. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Allowable Subject Matter

8. Claims 34-39 are allowed.
9. Claim 6, 17, 18, 24, 44, and 48-50 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Further, if the associate structure required to perform the method of claim 17 were added to system claim 19, claim 19 would be considered allowable. Examiner further notes that he reserves the right to update his search with respect to all pending claims.
10. In the interest of compact prosecution, if Applicant desires to act upon any of said allowable subject matter, the Examiner is more than welcome to entertain a telephone conversation to discuss such issues.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 40–41, 43, and 45–47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Powell (U.S. 6,195,590).

As per claim 40, Powell teaches a computer-implemented method for determining customer service impact, comprising:

Receiving item orders, each having a requested completion date (See column 1, lines 62–67, column 2, lines 17–30, column 3, lines 1–3 and 60–67, wherein items ordered have dates established as required completion dates);

scheduling a scheduled completion date for each item order (See column 1, lines 62–67, column 2, lines 17–30, column 3, lines 1–3 and 60–67, wherein a completion date is scheduled for each order/event);

selecting at least one item order, each item order having a scheduled completion date (See column 1, lines 62–67, column 2, lines 17–35 and line 65—column 3, line 20 and lines 60–67, wherein each order has a scheduled completion date and wherein the order is selected to determine the delta value, or the value representing whether the order is early or late with regards to the schedule);

comparing the scheduled completion date with the requested completion date for each selected item orders (See column 1, lines 62–67, column 2, lines 17–35 and line 65—column 3, line 20 and lines 60–67, wherein each order has a scheduled completion date and wherein the order is selected to determine the delta value, or the value representing whether the order is early or late with regards to the schedule);

deriving a customer service measurement for each selected item order based on said comparing, the customer service measurement comprising a measurement of at least one of money and a combination of time and money (See column 2, lines 17–35 and line 65—column 3, line 20 and lines 60–67, and column 6, lines 25–55, wherein a measurement of earliness or lateness is derived based on time, and wherein cost and money are considered when determining if changes should be made to improve the project meeting the original baseline schedule).

However, Powell does not expressly disclose that the received orders are line item orders for an individual customer requested product for purchase.

Powell discloses scheduling an order for manufacturing. It is old and well known in the art that orders that are manufactured based on requests from individual customers who require such items. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include that the orders are received from individual customers in order to more efficiently allocate resources to meet the demand of the customers in the market.

As per Applicant's most recent amendment "deriving *by a computer* a customer service measurement" Examiner notes that Powell is at least capable of performing this derivation and even arguably suggests and/or teaches it as it discusses this exact embodiment (Powell, Figs. 2–4; col. 8, lines 31–48, discussing an alternative embodiment that uses the central computer to

perform the calculations and information storage in addition to the activity manager's functions). Nevertheless, merely providing an automatic means, namely a computer and its standard components, operating a computer program embodied on a computer readable medium, to replace a manual activity which accomplishes the same result is not sufficient to distinguish over the prior art. *In re Venner*, 262 F.2d 91, 95, 120 USPQ 193, 194 (CCPA 1958). It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the method of Powell to include performance of its steps by a computer because the above components of a computer system provide a user friendly environment that facilitates and expedites the analysis of a company's business processes.

13. As per claim 41, Powell discloses wherein customer service measurement includes the amount of time difference between the requested completion date and a scheduled completion date multiplied by the value of the item order (See column 2, lines 17–35 and line 65—column 3, line 20 and lines 60–67, and column 6, lines 29–31, wherein a measurement of earliness or lateness is derived based on time. See column 6, lines 30–40 and line 55—column 7, line 15 and 25–45, wherein the value (or cost) is amplified with respect to the measurement). However, Powell does not expressly disclose line item orders.

Powell discloses scheduling an order for manufacturing. It is old and well known in the art that orders that are manufactured based on requests from individual customers who require such items. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include that the orders are received from individual customers in order to more efficiently allocate resources to meet the demand of the customers in the market.

14. As per claim 43, Powell teaches a computer-implemented method for determining customer service impact, comprising:

receiving customer item orders, each having a requested completion date, wherein each customer item is an individual customer requested product for purchase (See column 1, lines 62–67, column 2, lines 17–30, column 3, lines 1–3 and 60–67, wherein items ordered have dates established as required completion dates);

scheduling a scheduled completion date for each item order (See column 1, lines 62–67, column 2, lines 17–30, column 3, lines 1–3 and 60–67, wherein a completion date is scheduled for each order/event);

selecting at least one item order (See column 1, lines 62–67, column 2, lines 17–35 and line 65—column 3, line 20 and lines 60–67, wherein each order has a scheduled completion date and wherein the order is selected to determine the delta value, or the value representing whether the order is early or late with regards to the schedule);

comparing the scheduled completion date with the requested completion date for each selected item order (See column 1, lines 62–67, column 2, lines 17–35 and line 65—column 3, line 20 and lines 60–67, wherein each order has a scheduled completion date and wherein the order is selected to determine the delta value, or the value representing whether the order is early or late with regards to the schedule);

deriving a customer service measurement for each selected item order based on said comparing (See column 2, lines 17–35 and line 65—column 3, line 20 and lines 60–67, and column 6, lines 29–31, wherein a measurement of earliness or lateness is derived based on time);

identifying a subset of item orders having a customer service measurement that indicates delay (See column 5, lines 18–21, wherein a user would use cited "identifying" function for above discussed delta value or customer service indicator or measurement which is subject to a delay. See column 6, lines 32–42); and

performing at least one material limitation inquiry on the subset of item orders to identify a cause of the customer service measurement indicating delay (See column 5, lines 13–15, wherein "beginning of an activity constrained by completion of another activity" indicating applying or performing "constraint").

However, Powell does not expressly disclose that the delay is what caused the customer service measurement to be greater than a predetermined threshold or line item orders.

Powell discloses a system that monitors operations and determines delays. Powell further discloses a customer service measurement based on a measurement of earliness or lateness. It is old and well known in scheduling arts to set a threshold above which events, such as delays, are unacceptable and a manager is notified. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include thresholds that indicate lateness in order to more efficiently notify a manager of a delay.

Further, Powell discloses scheduling an order for manufacturing. It is old and well known in the art that orders that are manufactured based on requests from individual customers who require such items. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include that the orders are received from individual customers in order to more efficiently allocate resources to meet the demand of the customers in the market.

As per Applicant's most recent amendment "deriving *by a computer* a customer service measurement" Examiner notes that Powell is at least capable of performing this derivation and even arguably suggests and/or teaches it (Powell, Figs. 2-4; col. 8, lines 31-48, discussing an alternative embodiment that uses the central computer to perform the calculations and information storage in addition to the activity manager's functions). Nevertheless, merely providing an automatic means, namely a computer and its standard components, operating a computer program embodied on a computer readable medium, to replace a manual activity which accomplishes the same result is not sufficient to distinguish over the prior art. *In re Venner*, 262 F.2d 91, 95, 120 USPQ 193, 194 (CCPA 1958). It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the method of Powell to include performance of its steps by a computer because the above components of a computer system provide a user friendly environment that facilitates and expedites the analysis of a company's business processes.

15. As per claims 45-46, Powell teaches performing material limitation inquires (as per claim 43). Therefore, with regards to claims 45-46, these claims do not occur when the "at least one of" material inquiry is performed.

16. As per claim 47, Powell discloses identifying a subset of item orders having a customer service measurement that indicates delay (See column 5, lines 18-21, wherein a user would use cited "identifying" function for above discussed delta value or customer service indicator or measurement which is subject to a delay. See column 6, lines 32-42); and

performing at least one of material limitation inquiry on the subset of item orders to identify a cause of the customer service measurement indicating delay, wherein a resource is responsible for the delay (See column 5, lines 13–15, wherein "beginning of an activity constrained by completion of another activity" indicating applying or performing "constraint").

However, Powell does not expressly disclose that the delay is what caused the customer service measurement to be greater than a predetermined threshold or line item orders.

Powell discloses a system that monitors operations and determines delays. Powell further discloses a customer service measurement based on a measurement of earliness or lateness. It is old and well known in scheduling arts to set a threshold above which events, such as delays, are unacceptable and a manager is notified. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include thresholds that indicate lateness in order to more efficiently notify a manager of a delay.

Further, Powell discloses scheduling an order for manufacturing. It is old and well known in the art that orders that are manufactured based on requests from individual customers who require such items. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include that the orders are received from individual customers in order to more efficiently allocate resources to meet the demand of the customers in the market.

17. Claims 1, 4, 7-13, 15-16, 18-20, 25-30, and 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Powell (U.S. 6,195,590) in view of Chapman (U.S. 5,128,860).

18. As per claim 1, Powell teaches a computer-implemented method for determining customer service impact, comprising:

Receiving customer item orders, each having a requested completion date, wherein each customer item is an individual customer requested product for purchase (See column 1, lines 62-67, column 2, lines 17-30, column 3, lines 1-3 and 60-67, wherein items ordered have dates established as required completion dates);

scheduling a scheduled completion date for each item order (See column 1, lines 62-67, column 2, lines 17-30, column 3, lines 1-3 and 60-67, wherein a completion date is scheduled for each order/event);

selecting at least one item order, each item order having a scheduled completion date (See column 1, lines 62-67, column 2, lines 17-35 and line 65—column 3, line 20 and lines 60-67, wherein each order has a scheduled completion date and wherein the order is selected to determine the delta value, or the value representing whether the order is early or late with regards to the schedule);

comparing the scheduled completion date with the requested completion date for each selected item orders (See column 1, lines 62-67, column 2, lines 17-35 and line 65—column 3, line 20 and lines 60-67, wherein each order has a scheduled completion date and wherein the

order is selected to determine the delta value, or the value representing whether the order is early or late with regards to the schedule);

deriving a customer service measurement for each selected item order based on said comparing, the customer service measurement comprising a measurement of at least one of money and a combination of time and money (See column 2, lines 17–35 and line 65—column 3, line 20 and lines 60–67, and column 6, lines 25–55, wherein a measurement of earliness or lateness is derived based on time, and wherein cost and money are considered when determining if changes should be made to improve the project meeting the original baseline schedule).

However, Powell does not expressly disclose that the received orders are line item orders for an individual customer requested product for purchase. Further, Powell does not expressly disclose and Chapman discloses wherein said comparing comprises:

generating a demand array of item orders (See column 3, lines 50–65, column 4, lines 35–60, and column 9, lines 45–50, wherein a demand array is created that conveys demanded items);

generating a supply array of manufacturing inventory (See column 3, lines 59–67, column 8, line 60—column 9, line 30, which discloses an array of the supply/resources available);

selecting an item order in the demand array (See column 4, lines 1–13 and 60–65, column 9, lines 45–55, column 10, lines 5–22, wherein an item is selected to which resources are assigned);

matching manufacturing inventory in the supply array with the selected item order (See column 4, lines 1–13 and 60–65, column 9, lines 45–55, column 10, lines 5–22, wherein an item is selected to which resources are assigned); and

comparing the scheduled completion date of an item in the supply array with the requested completion date for the matched item in the demand array (See column 4, lines 60–67, column 8, lines 45–61, column 9, lines 19–32 and 45–50, and column 10, lines 5–25, wherein the schedules are compared).

However, Chapman does not expressly disclose that the received orders are line item orders for an individual customer requested product for purchase.

Both Chapman and Powell disclose systems for improving scheduling in manufacturing systems where demands have time varying elements. Powell discloses scheduling an order and, using data stored in the system, comparing a completion and a requested completion date. Chapman discloses arranging the data of the system into arrays and then manipulating this data to schedule demand fulfillment in a manufacturing process. It would have been obvious to one of ordinary skill in the art at the time of the invention to use arrays to store and manipulate the data of Powell in order to more efficiently allocate and schedule resources by arranging the data using means that allow quicker evaluation of the data. See Chapman, column 2, lines 45–65 and column 5, lines 29–40.

Further, as discussed above, Powell discloses scheduling an order. It is old and well known in the art that orders that are manufactured based on requests from individual customers who require such items. Therefore, it would have been obvious to one of ordinary skill in the art

at the time of the invention to include that the orders are received from individual customers in order to more efficiently allocate resources to meet the demand of the customers in the market.

As per Applicant's most recent amendment "deriving *by a computer* a customer service measurement" Examiner notes that Powell is at least capable of performing this derivation and even arguably suggests and/or teaches it (Powell, Figs. 2–4; col. 8, lines 31–48, discussing an alternative embodiment that uses the central computer to perform the calculations and information storage in addition to the activity manager's functions). Nevertheless, merely providing an automatic means, namely a computer and its standard components, operating a computer program embodied on a computer readable medium, to replace a manual activity which accomplishes the same result is not sufficient to distinguish over the prior art. *In re Venner*, 262 F.2d 91, 95, 120 USPQ 193, 194 (CCPA 1958). It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the method of Powell to include performance of its steps by a computer because the above components of a computer system provide a user friendly environment that facilitates and expedites the analysis of a company's business processes.

19. As per claim 4, Powell discloses wherein said deriving comprises:

deriving a customer service measurement for each item order based on said comparing, the customer service measurement comprising the value of the item order (See column 2, lines 17–35 and line 65—column 3, line 20 and lines 60–67, and column 6, lines 29–31, wherein a measurement of earliness or lateness is derived based on time. See column 6, lines 30–40 and

line 55—column 7, line 15 and 25–45, wherein the value (or cost) is also considered with respect to the measurement).

20. As per claim 7, Powell teaches determining an overall customer service measurement based on the customer service measurement for each item order (See column 2, lines 17–35 and line 65—column 3, line 20 and lines 60–67, and column 6, lines 29–31).

21. As per claim 8, Powell teaches reporting the overall customer service measurement as the overall customer service measurement for that scheduling operation (See column 5, lines 45–67, column 6, lines 40–55, column 7, lines 15–30, wherein reports are generated).

22. As per claim 9, Powell discloses displaying the customer service measurement on a calendar showing the total customer service measurement for a predetermined time period (See column 2, lines 55—column 3, line 10 and lines 60–67, and column 4, lines 1–15, wherein the customer service measurement is shown and considered when scheduling other orders and activities. See also tables 1–2).

23. As per claim 10, Powell discloses repeating said receiving, scheduling, selecting, comparing, deriving, and determining for different schedules to determine the customer service impact of schedule changes (See column 2, lines 1–6, column 4, lines 20–32, column 5, lines 30–42, wherein changes to the schedule are evaluated).

24. As per claim 11, Powell discloses determining a customer service measurement for based on the customer service measurement for each item order received (See column 2, lines 17–35 and line 65—column 3, line 20 and lines 60–67, and column 6, lines 29–31, wherein a measurement of earliness or lateness of a product is derived based on time).

However, neither Powell nor Chapman expressly disclose a first and a second customer.

Powell discloses receiving and scheduling an order for manufacture. It is old and well known in the art that orders that are manufactured based on requests from individual customers who require such items. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include that the orders are received from individual customers in order to more efficiently allocate resources to meet the demand of the customers in the market.

25. As per claim 12, Powell teaches displaying the customer service measurement on a calendar showing the total customer service measurement for a predetermined time period (See column 2, lines 55—column 3, line 10 and lines 60–67, and column 4, lines 1–15, wherein the customer service measurement is shown and considered when scheduling other orders and activities. See also tables 1–2).

26. As per claim 13, Powell further comprising repeating said receiving, scheduling, selecting, comparing and determining for different schedules to determine the customer service impact of schedule changes (See column 2, lines 1–6, column 4, lines 20–32, column 5, lines 30–42, wherein changes to the schedule are evaluated).

27. As per claim 15, Powell discloses items, wherein data concerning the item is controlled by the system (See column 4, line 62—column 5, line 12, and table 1). Powell further discloses all the activities for all the components needed to complete the product (i.e. engineering, purchasing, fabrication, assembly) (See column 3, lines 54–57). However, Powell does not expressly disclose line items or generating a demand array or that the items are unshipped.

Chapman discloses generating a demand array of item orders (See column 3, lines 50–65, column 4, lines 35–60, and column 9, lines 45–50, wherein a demand array is created that conveys demanded items). However, Chapman does not expressly disclose line items.

Both Chapman and Powell disclose systems for improving scheduling in manufacturing systems where demands have time varying elements. Powell discloses scheduling an order and, using data stored in the system, comparing a completion and a requested completion date. Chapman discloses arranging the data of the system into arrays and then manipulating this data to schedule demand fulfillment in a manufacturing process. It would have been obvious to one of ordinary skill in the art at the time of the invention to use arrays to store and manipulate the data of Powell, such as demand data, in order to more efficiently allocate and schedule resources by arranging the data using means that allow quicker evaluation of the data. See Chapman, column 2, lines 45–65 and column 5, lines 29–40.

Further, Powell discloses all the activities needed to complete the product, such as engineering, purchasing, fabrication, assembly. It is well known in the art that completing a product for a customer includes delivery of said product. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include shipping in the activities

needed to complete the product in order to increase customer service by including all the activities required to complete the order of the customer.

Further, Powell discloses scheduling an order for manufacturing. It is old and well known in the art that orders that are manufactured based on requests from individual customers who require such items. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include that the orders are received from individual customers in order to more efficiently allocate resources to meet the demand of the customers in the market.

28. As per claim 16, Powell does not expressly disclose and Chapman discloses wherein said generating a supply array comprises generating a supply array of at least one of inventory work orders and manufactured inventory (See column 3, lines 59–67, column 8, line 60—column 9, line 30, which discloses an array of the supply/resources available and assignable to work).

29. As per claim 19, Powell teaches a system for determining customer service impact, comprising:

a receiver for receiving item orders, each having a requested completion date (See column 1, lines 62–67, column 2, lines 17–30, column 3, lines 1–3 and 60–67, wherein items ordered have dates established as required completion dates);

a scheduler for scheduling a scheduled completion date for each item order (See column 1, lines 62–67, column 2, lines 17–30, column 3, lines 1–3 and 60–67, wherein a completion date is scheduled for each order/event);

a selector for selecting at least one item order, each item order having a scheduled completion date (See column 1, lines 62–67, column 2, lines 17–35 and line 65—column 3, line 20 and lines 60–67, wherein each order has a scheduled completion date and wherein the order is selected to determine the delta value, or the value representing whether the order is early or late with regards to the schedule);

a comparator for comparing the scheduled completion date with the requested completion date for the selected item orders (See column 1, lines 62–67, column 2, lines 17–35 and line 65—column 3, line 20 and lines 60–67, wherein each order has a scheduled completion date and wherein the order is selected to determine the delta value, or the value representing whether the order is early or late with regards to the schedule);

a measurement subsystem for deriving a customer service measurement, the customer service measurement comprising at least one money and a combination of time and money, for each selected item order based on the comparison (See column 2, lines 17–35 and line 65—column 3, line 20 and lines 60–67, and column 6, lines 25–55, wherein a measurement of earliness or lateness is derived based on time, and wherein cost and money are considered when determining if changes should be made to improve the project meeting the original baseline schedule).

However, Powell does not expressly disclose that the received orders are line item orders for an individual customer requested product for purchase. Further, Powell does not expressly disclose and Chapman discloses wherein said comparing comprises:

a first generator for generating a demand array of item orders (See column 3, lines 50–65, column 4, lines 35–60, and column 9, lines 45–50, wherein a demand array is created that conveys demanded items);

a second generator generating a supply array of manufacturing inventory (See column 3, lines 59–67, column 8, line 60—column 9, line 30, which discloses an array of the supply/resources available);

a selector for selecting an item order in the demand array (See column 4, lines 1–13 and 60–65, column 9, lines 45–55, column 10, lines 5–22, wherein an item is selected to which resources are assigned);

a matching subsystem for matching manufacturing inventory in the supply array with the selected item order (See column 4, lines 1–13 and 60–65, column 9, lines 45–55, column 10, lines 5–22, wherein an item is selected to which resources are assigned); and

a comparator for comparing the scheduled completion date of an item in the supply array with the requested completion date for the matched item in the demand array (See column 4, lines 60–67, column 8, lines 45–61, column 9, lines 19–32 and 45–50, and column 10, line 5–25, wherein the schedules are compared).

However, Chapman does not expressly disclose that the received orders are line item orders for an individual customer requested product for purchase.

Both Chapman and Powell disclose systems for improving scheduling in manufacturing systems where demands have time varying elements. Powell discloses scheduling an order and, using data stored in the system, comparing a completion and a requested completion date. Chapman discloses arranging the data of the system into arrays and then manipulating this data

to schedule demand fulfillment in a manufacturing process. It would have been obvious to one of ordinary skill in the art at the time of the invention to use arrays to store and manipulate the data of Powell in order to more efficiently allocate and schedule resources by arranging the data using means that allow quicker evaluation of the data. See Chapman, column 2, lines 45–65 and column 5, lines 29–40.

Further, as discussed above, Powell discloses scheduling an order. It is old and well known in the art that orders that are manufactured based on requests from individual customers who require such items. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include that the orders are received from individual customers in order to more efficiently allocate resources to meet the demand of the customers in the market.

30. Claims 22–23, and 25–27 recite equivalent limitations to claims 4–5, and 7–9, respectively, and are therefore rejected using the same are and rationale as set forth above.

31. As per claim 28, Powell discloses a display for displaying the customer service measurement of different schedules to determine the customer service impact of schedule changes (See column 2, lines 1–6, column 4, lines 20–32, column 5, lines 30–42, column 8, lines 15–25, wherein changes to the schedule are evaluated and displayed).

32. As per claim 29, Powell teaches a display for displaying a customer service measurement based on the customer service measurement for each item order (See column 2, lines 55—

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column 3, line 10 and lines 60–67, and column 4, lines 1–15, wherein the customer service measurement is displayed. See also tables 1–2).

However, neither Powell nor Chapman expressly disclose a first customer.

Powell discloses receiving and scheduling an order for manufacture. It is old and well known in the art that orders that are manufactured based on requests from individual customers who require such items. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include that the orders are received from individual customers in order to more efficiently allocate resources to meet the demand of the customers in the market.

33. Claims 30, and 32–33 recite equivalent limitations to claims 12, and 15–16, respectively, and are therefore rejected using the same are and rationale as set forth above.

34. Claim 51 is rejected under 35 U.S.C. 103(a) as being unpatentable over Powell (U.S. 6,195,590) in view of Chapman (U.S. 5,128,860) further in view of Aykin (U.S. 6,516,301).

35. As per claim 51, Powell teaches the known technique of selecting one or more item orders, and determining a customer service measurement for each of the selected item orders based on the custom service measurement for each item order (*see* discussion *supra* ¶ 18) but does not explicitly apply this technique to one or more customers, nor does Chapman. However, the basis of item orders upon a customer request, and as such having a customer associated with an item order is a well known concept, as evidenced at least by Aykin, in the analogous art of managing customer orders via customer service metrics (Aykin, col. 1, lines 34–40; col. 2, lines 4–34). Since each individual element and its function are shown in the prior art, albeit shown in separate references and/or embodiments, the difference between the claimed subject matter and the prior art rests not on any individual element or function but in the very combination itself—that is in the substitution of the customers of Aykin for the item orders of Powell. Thus, the simple substitution of one known element for another producing a predictable result renders the claim limitation obvious.

It would have been obvious to one of ordinary skill in the art to apply the known technique of Powell to customers as taught by Aykin since the claimed invention is merely a combination of old elements, and in the combination each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

36. Claims 5, 23, and 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Powell (U.S. 6,195,590) in view of Kleinfeld (*Engineering Economics*).

37. As per claims 5, 23, and 42, Powell discloses deriving a customer service measurement for each item order comprising the time difference between the requested completion date and a scheduled completion date (See column 2, lines 17–35 and line 65—column 3, line 20 and lines 60–67, wherein the delta value is the actual date minus the required or requested date (that is, the difference of the dates)). However, Powell does not expressly disclose that the customer service measurement includes the amount of time difference between the requested completion date and a scheduled completion date multiplied by the value of the line item order and multiplied by a predetermined interest rate.

Kleinfeld discloses the calculation of a value based on the time differences multiplied by the value of the line item order and multiplied by a predetermined interest rate (See pages 34, section 1, page 35, and page 36, wherein a financial values is multiplied by an interest or discount rate based on the interval of time).

Powell discloses a system for improving scheduling in manufacturing systems where demands have time varying elements. Powell discloses scheduling an order and, using data stored in the system, comparing a completion and a requested completion date. Kleinfeld discloses valuation using interest rates and timeframes. It would have been obvious to one of ordinary skill in the art at the time of the invention to use this valuation technique in the system

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Powell in order to more efficient valuing and guidance with respect to decision making and management. See Kleinfeld, pages 33–34.

Response to Arguments

38. Applicant argues that the scheduling in Powell is based on activities and not on an item order as claimed. Applicant's Remarks, 4/10/08, pg. 16. Applicant further argues that any modification of Powell to include such functionality would be improper. *Id.* In response, an item order is nothing more than a particular assigned undertaking such as the performance of work. Applicant admits that Powell is based on activities regarding the manufacture of a product. Applicant's Remarks, 4/10/08, pg. 16, Powell, col. 2, lines 19–22, and col. 3, lines 24–25). Powell also teaches that “in the production of products, the work effort is a sequence of operations” (Powell, col. 1, lines 11–12) and that this sequence of operations or activities are performed at workstations (Powell, col. 3, lines 40–51). Using an ordinary and customary interpretation, the undertaking is an activity, and it is assigned to a particular workstation. Thus, Powell at least suggests, and arguably explicitly teaches an item order. As such, with respect to the disputed limitation, a *prima facie* case of obviousness has been made by the Examiner.

39. Applicant argues that with respect to claim 19, Powell does not disclose a measurement subsystem for deriving a customer service measurement because the derivation is performed by a live person. First, there is nothing in Applicant's claim that requires the use of a computer to perform the method. Second, Powell discusses the performance of said limitation by a computer (Powell, Figs. 2–4; col. 8, lines 31–48, discussing an alternative embodiment that uses the central computer to perform the calculations and information storage in addition to the activity manager's functions; *see also* discussion *supra* ¶ 18). Finally, merely providing an automatic

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means, namely a computer and its standard components, operating a computer program embodied on a computer readable medium, to replace a manual activity which accomplishes the same result is not sufficient to distinguish over the prior art. *In re Venner*, 262 F.2d 91, 95, 120 USPQ 193, 194 (CCPA 1958). It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the method of Powell to include performance of its steps by a computer because the above components of a computer system provide a user friendly environment that facilitates and expedites the analysis of a company's business processes.

Conclusion

40. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JUSTIN M. PATS whose telephone number is (571)270-1363. The examiner can normally be reached on Monday through Friday, 8:00am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Beth Boswell can be reached on 571-272-6737. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Justin M Pats/
Examiner, Art Unit 3623

/Andre Boyce/
Primary Examiner, Art Unit 3623